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U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK

ATTORNEY'S DOCKET NUMBER

**TRANSMITTAL LETTER TO THE UNITED STATES
DESIGNATED/ELECTED OFFICE (DO/EO/US)
CONCERNING A FILING UNDER 35 U.S.C. § 371**

449122001300

U.S. APPLICATION NO. (if known) see 37 CFR 1.55

Not yet Assigned

INTERNATIONAL APPLICATION NO.
PCT/DE99/02346

INTERNATIONAL FILING DATE

29 July 1999

PRIORITY DATE CLAIMED

29 July 1998

TITLE OF INVENTION

TRANSMISSION OF DIALOGUE INFORMATION FROM A TELECOMMUNICATIONS NETWORK TO A SUBSCRIBER TERMINAL

APPLICANT(S) FOR DO/EO/US

Reinhard BECHER et al.

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371
3. ☐ This is an express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (21) indicated below.
4. ☒ The US has been elected by the expiration of 19 months from the priority date (PCT Article 31).
5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
 - a. ☒ is attached hereto (required only if not communicated by the International Bureau).
 - b. ☒ has been communicated by the International Bureau.
 - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☒ An English language translation of the International Application under PCT Article 19 (35 U.S.C. 371(c)(2)).
 - a. ☒ is attached hereto.
 - b. ☐ has been previously submitted under 35 U.S.C. 154(d)(4).
7. ☒ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
 - a. ☐ are attached hereto (required only if not communicated by the International Bureau)
 - b. ☒ have been communicated by the International Bureau
 - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
 - d. ☐ have not been made and will not be made.
8. ☐ An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☐ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4))
10. ☐ An English language translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5))

Items 11. to 16. below concern document(s) or information included:

11. ☒ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☒ A FIRST preliminary amendment.
14. ☐ A SECOND or SUBSEQUENT preliminary amendment.
15. ☐ A substitute specification.
16. ☐ A change of power of attorney and/or address letter.
17. ☐ A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 35 U.S.C. 1.821 - 1.825.
18. ☐ A second copy of the published international application under 35 U.S.C. 154(d)(4)
19. ☐ A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4)
20. ☒ Other items or information. 1. Translation of International Application 2. IPER including Amended Sheets and Translation of Amended Sheets 3. Transmittal of Intl' Search Report with Search Report 4. Return receipt postcard.

CERTIFICATE OF HAND DELIVERY

I hereby certify that this correspondence is being hand filed with the United States Patent and Trademark Office in Washington, D.C. on January 26, 2001.

LaVern Whistone

500 Rec'd PCT/PTO 26 JAN 2001

PETITION NO. (if known, see 37 CFR 1.5)

09/744594

INTERNATIONAL
APPLICATION NO. PCT/DE99/02346ATTORNEY'S DOCKET
NUMBER: 449122001300☒ The following fees are submitted:**BASIC NATIONAL FEE (37 CFR 1.492(a)(1)-(5)):**

Neither international preliminary examination fee (37 CFR 1.482)
nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO
and International Search Report not prepared by the EPO or JPO \$1,000.00

International preliminary examination fee (37 CFR 1.482) not paid to
USPTO but International Search Report prepared by the EPO or JPO \$860.00

International preliminary examination fee (37 CFR 1.482) not paid to USPTO
but international search fee (37 CFR 1.445(a)(2)) paid to USPTO \$710.00

International preliminary examination fee (37 CFR 1.482) paid to USPTO
but all claims did not satisfy provision of PCT Article 33(1)-(4) \$690.00

International preliminary examination fee (37 CFR 1.482) paid to USPTO
and all claims satisfied provisions of PCT Article 33(1)-(4) \$100.00

CALCULATIONS
PTO USE ONLY

ENTER APPROPRIATE BASIC FEE AMOUNT = \$860.00

Surcharge of \$130.00 for furnishing the oath or declaration later than ☐ 20 ☐ 30 months from
the earliest claimed priority date (37 CFR 1.492(e)). \$0

CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE	
Total claims	21 - 20 =	1	x \$18.00	\$18.00
Independent claims	3 - 3 =	0	x \$80.00	\$0
MULTIPLE DEPENDENT CLAIM(S) (if applicable)			+ \$270.00	\$0
TOTAL OF ABOVE CALCULATIONS =				\$878.00

☐ Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced
by 1/2 \$0

SUBTOTAL = \$878.00

Processing fee of \$130.00 for furnishing the English translation later than
☐ 20 ☐ 30 months from the earliest claimed priority date (37 CFR 1.492(f)). + \$0

TOTAL NATIONAL FEE = \$878.00

Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be
accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property + \$0

TOTAL FEES ENCLOSED = \$878.00

Amount to be refunded:	\$
charged:	\$

a. ☒ A check in the amount of \$ 878.00 to cover the above fees is enclosed.b. ☒ The Commissioner is hereby authorized to charge any additional fees that may be required, or credit any overpayment to
Deposit Account No. 03-1952.NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive
(37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

END ALL CORRESPONDENCE TO:

Kevin R. Spivak
Morrison & Foerster LLP
2000 Pennsylvania Avenue, N.W.
Washington, D.C. 20006-1888

SIGNATURE

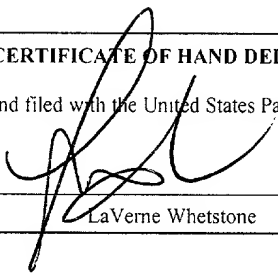
Kevin R. Spivak
Registration No. 43,148

Reg. No. 36,119

Docket No. 449122001300
Client Reference 1998P02199WOUS

CERTIFICATE OF HAND DELIVERY

I hereby certify that this correspondence is being hand filed with the United States Patent and Trademark Office in Washington, D C on January 26, 2001.


LaVerne Whetstone

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the application of:

Reinhard BECHER et al.

Serial No.: Not yet Assigned

Filing Date: January 26, 2001

For: PERFORMING INTERACTIVE
SERVICES DIALOGS IN A
TELECOMMUNICATIONS NETWORK

Examiner: To be Assigned

Group Art Unit: To be Assigned

PRELIMINARY AMENDMENT

Commissioner for Patents
Washington, D.C. 20231

Sir:

Prior to examination on the merits, please amend this application as follows:

IN THE SPECIFICATION

Please amend the specification as follows.

Page 1, line 1, delete "Description";

line 3, center and capitalize the title --PERFORMING INTERACTIVE
SERVICES DIALOGS IN A TELECOMMUNICATIONS NETWORK--;

line 5, insert --FIELD OF THE INVENTION--; and

between lines 30 and 31, insert --BACKGROUND OF THE INVENTION--.

Page 4, between lines 33 and 34, insert --SUMMARY OF THE INVENTION--.

line 34, delete "It is therefore, the object of the invention" and insert --
Accordingly, one feature of this invention is --.

Page 5, line 4, delete "this object is achieved in that," .

Page 7, line 10, delete "object" and insert -- aspect of the invention --.

Page 8, line 16, delete "object set" and insert -- embodiment described --.

Page 9, between lines 25 and 26, insert --BRIEF DESCRIPTION OF THE
DRAWINGS--; and

between lines 31 and 32, insert --DETAILED DESCRIPTION OF THE
INVENTION--.

IN THE ABSTRACT

Please replace the Abstract in its entirety with the Abstract attached hereto.

IN THE CLAIMS

Please amend the claims as follows.

1. A method for performing a dialog between a service [(DST)] of a telecommunication network [(MFN)] and a subscriber [(TNR)] connected to the network via a terminal [(MTL)], in which [method, at least] messages and/or input requests are output to the subscriber and [at least] information is input by the subscriber[, in the dialog via the terminal [(MTL)], and the service [(DST)] is continued in dependence on a dialog result [(drs)] derived therefrom,
[characterized in that] wherein the service [(DST)] transmits dialog information relating to the performance of the dialog, independently of the actions of the subscriber [(TNR)], to the terminal [(MTL)] of the subscriber via a network connection, this dialog information [(dif)] is stored by the terminal [(MTL)], and the terminal [(MTL)] performs the output(s) to the subscriber by means of the stored dialog information [(dif)] on the basis of a specific command given to it [and] , the terminal receives and processes the input(s) of the subscriber [(TNR)], and the

terminal derives a dialog result therefrom and transmits this result to the service [(DST)] via a network connection, wherein the stored dialog information is checked via the terminal to see whether it is adequate for performing the relevant dialog and, if not, a request message for the transmission of corresponding dialog information is sent, and the transmission of dialog information is requested via the terminal by means of a message sent to the network.

2. [The] A method [as claimed in] according to claim 1, [characterized in that] wherein the dialog information [(dif)] contains commands of a dialog program which is executed by a processor [(PRZ)] of the terminal for performing the dialog and determining the dialog result [(drs)].

3. [The] A method [as claimed in] according to claim 1 [or 2], [characterized in that] wherein the dialog information [(dif)] contains message information which describes the messages and input requests to be output and the type of expected inputs.

4. [The] A method [as claimed in one of claims 1 to 3] according to claim 1, [characterized in that] wherein the output to the subscriber is effected via a display[, e.g. by means of text and/or graphics].

5. [The] A method [as claimed in one of claims 1 to 4] according to claim 1, [characterized in that] wherein the output to the subscriber is effected at least partially via voice announcements, which are requested from the network [(MFN)] and are received from the network via a voice channel of a network connection at the time of the output and are output to the subscriber.

6. [The] A method [as claimed in one of claims 1 to 5] according to claim 1, [characterized in that] wherein the dialog information [(dif)] and/or the dialog result [(drs)] are at least partly transmitted via a transaction link of the network [(MFN)].

7. [The] A method [as claimed in one of claims 1 to 6] according to claim 1, [characterized in that] wherein the dialog information [(dif)] remains stored in the terminal after the dialog has finished.

Please cancel claims 8 and 9.

10. [The] method as claimed in [one of claims 1 to 9] claim 1, [characterized in that] wherein the output to the subscriber [(TNR)] is effected advantageously via at least one menu which offers a predetermined number of input possibilities to the subscriber, the subscriber selects one of these input possibilities by means of his input₂ and this input is used, in

dependence on the menu logic, as a dialog result [(drs)] or for the menu-controlled continuance of the dialog.

11. A telecommunication terminal [(MTL)] which can be connected to a telecommunication network [(MFN)] and which is set up for exchanging messages and/or commands with the network [(MFN)] and for outputting messages and input requests to a subscriber [(TNR)] utilizing the terminal [(MTL)] for using the network and for receiving inputs of the subscriber [(TNR)], [characterized by] comprising: a memory device [(MEM)] for storing dialog information [(dif)] relating to the performance of at least one dialog to the subscriber [(TNR)], a control device [(PRZ)] for executing the output(s) to the subscriber [(TNR)], for receiving and processing the input(s) of the subscriber and for deriving a dialog result [(drs)] by means of the dialog information, and a transmitting device [(SEE)] for receiving dialog information (dif), and for transmitting a dialog result [(drs)] via a network connection, wherein the terminal is constructed in such a manner that the stored dialog information is checked via the terminal to see whether it is adequate for performing the relevant dialog and, if not, a request message for the transmission of corresponding dialog information is sent, and the transmission of dialog information is requested via the terminal by means of a message sent to the network.

12. [The] A terminal [(MTL)] as claimed in] according to claim 11, [characterized in that] wherein the control device [(PRZ)] is set up as a processor for executing a dialog program, the commands of which for performing the dialog and determining the dialog result are contained in the dialog information.

13. [The] A terminal [(MTL)] as claimed in] according to claim 11 [or 12], [characterized by] further comprising a voice output device [(MLE)] for outputting voice announcements to the subscriber.

14. [The] A terminal [(MTL)] as claimed in] according to claim 13, [characterized in that] wherein it is set up for requesting voice announcements from the network [(MFN)] and receiving these from the network via the voice channel of a network connection and outputting them to the subscriber.

15. [The] A terminal [(MTL)] as claimed in one of the claims 11 to 14] according to claim 11, [characterized in that] wherein it is set up for requesting the transmission of the dialog information [(dif)] by means of a message sent to the network [(MFN)].

16. [The] A terminal [(MTL) as claimed in one of claims 11 to 14] according to claim 11, [characterized in that] wherein it is set up for keeping the dialog information [(dif)] stored after the dialog has ended.

17. [The] A terminal [(MTL) as claimed in one of claims 11 to 16] according to claim 11, [characterized by] further comprising a device a for receiving dialog information [(dif)] and/or for sending a dialog result [(drs)] via a transaction link of the network [(MFN)].

18. A telecommunication network [(MFN)] in which services for subscribers can be used, a dialog with the subscriber [(TNR)] who uses the service and is connected to the network via a terminal [(MTL)] being provided in at least one the services [(DST)] , and in this dialog, [at least] messages and/or input requests are output to the subscriber and [at least] information is input by the subscriber, [characterized in that it] wherein said network is set up for transmitting, in dependence on the service operation, the dialog information required by the terminal [(MTL)] for performing the dialog, via a network connection, receiving a dialog result [(drs)] transmitted by the terminal [(MTL)] and continuing service [(DST)] in dependence on this result.

19. [The] A telecommunication network[, (MFN) as claimed in] according to claim 18, [characterized in that it is set up] configured for sending dialog information [(dif)] on the basis of a specific request message by the terminal [(MTL)].

20. [The] A telecommunication network[, (MFN) as claimed in] according to claim 18 [or 19], [characterized in that it is set up] configured for sending voice announcements, which can be used in an output to the subscriber by the terminal, on the basis of a specific request message by the terminal [(MTL)].

21. [The] A telecommunication network [(MFN) as claimed in one of claims 18 to 20] according to claim 18, [characterized by] further comprising a server device [(DGS)] for central storage of dialog information [(dif)] and/or output information[, especially voice announcements].

22. [The] A telecommunication network [(MFN) as claimed in] according to claim 21, [characterized in that it is set up] configured for forwarding request messages relating to the transmission of dialog information [(dif)] and[, respectively,] voice announcements to the server device [(DGS)] and for accepting from the [latter] server device the requested dialog information [(dif)] and[, respectively,] voice announcements and transmitting them to the terminal [(MTL)].

23. [The] A telecommunication network [(MFN) as claimed in] according to claim 21 [or 22, characterized in that it is set up] , configured for transferring the control of the service [(DST)] to the server device [(DGS)] for the duration of the performance of the dialog and continuing the service after the dialog has ended and the dialog result [(drs)] has been received by the server device [(DGS)].

REMARKS

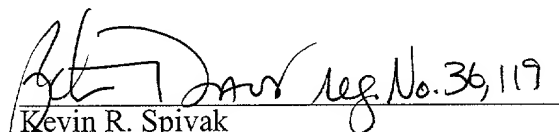
The above amendments to the specification, claims and abstract have been made to place the application in proper U.S. format and to conform with proper grammatical and idiomatic English. None of the amendments herein are made for reasons related to patentability. No new matter has been added.

In the event that the transmittal letter is separated from this document and the Patent Office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. 03-1952 referencing docket no. 449122001300. However, the Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

Respectfully submitted,

Dated: January 26, 2001

By:


for Kevin R. Spivak
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ABSTRACT

In a dialog between service (DST) of a telecommunication network and a subscriber (TNR) connected to the network via a terminal (MTL), messages are output via the terminal and information is input by the subscriber due to the fact that the terminal (MTL), on the basis of a specific command given to it, by means of dialog information (dif) which is transmitted to the terminal via a network connection and is stored in the terminal and which relates to the performance of the dialog, effects the output(s) to the subscriber (TNR) and accepts the processes the input(s) of the subscriber (TNR). From this, a dialog result (drs) is derived and transmitted to the service (DST) via a network connection. The network continues the service (DST) in dependence on the dialog result (drs).

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09/744594
500 Rec'd PCT/PTO 26 JAN 2001

Description

Performing interactive service dialogs in a telecommunication network

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The invention relates to a method for performing a dialog between a service of a telecommunication network and a subscriber connected to the network via a terminal, in which method, at least
10 messages and/or input requests are output to the subscriber and at least information is input by the subscriber, in the dialog via the terminal, and the service is continued in dependence on a dialog result derived therefrom.

15

Furthermore, the invention relates to a telecommunication terminal which can be connected to a telecommunication network and which is set up for exchanging messages and/or commands with the network and for outputting messages and input requests to a
20 subscriber utilizing the terminal, for using the network, and for receiving inputs of the subscriber.

Similarly, the invention relates to a telecommunication network in which services can be utilized by subscribers, in connection with which a
25 dialog with the subscriber utilizing the service and connected to the network via a terminal being provided in at least one of the services and in this dialog, at least messages and/or input requests are output to the subscriber and at least information is input by the
30 subscriber.

In many telecommunication networks, other services which can be addressed by a subscriber to the network and which will be called intelligent services in the text which follows are set up in addition to the
35 basic services such as, e.g. the telephone and facsimile service of a telephone network. These intelligent services can be, for example, supplementary services

- 2a -

network via its terminal and the intelligent service or, respectively, the network node controlling

the performance of the service is carried out with the aid of separate user-service-signaling systems. For example, the use of a DTMF (Dual-Tone Multi-Frequency) interface is known for the transmission of data to the service control point, but in this method, only numbers and a few special characters can be transmitted; in the opposite direction, spoken announcements are made in most cases which are called up when necessary by a so-called peripheral. In a GSM network, the service of the "unstructured supplementary service data" (USSD) can be utilized. This is a special type of signaling which can be initiated in phase 2 of the GSM network in both directions between terminal and network service. Another example is the utilization of information elements of an "intelligent network application part" (INAP) protocol such as, e.g. the core INAP according to the ETSI standard "intelligent network (IN); intelligent network capability set 1 (CS1), core intelligent network application protocol (INAP), Part 1: Protocol specification" 300 374-1, July 1994, of the European Telecommunications Standards Institute (ETSI); these protocols were originally designed for the internal communication in the network between switching centers and a service control point but can also be used for user-service-signaling. Naturally, the various types of signaling can be combined, e.g. an intelligent service can request the user to make an input via his mobile terminal via the above-mentioned INAP mechanism, in which procedure an announcement stored in the switching center or in a peripheral associated with the switching center is played and the user input occurs via DTMF signals which are collected via the switching center or, respectively, the peripheral and are forwarded to the service.

It is also known to arrange these dialogs in a so-called menu. The dialog is controlled by

- 3a -

the service network node, often with the aid of a peripheral.

In this method, the service presents a selection of various possibilities which are in each case allocated to a specific code, e.g. a number key; these are usually the numbers which are transmitted and decoded in accordance with the DTMF method. The menu can be announced to the mobile subscriber, e.g. with the aid of a peripheral, via a voice announcement. If the subscriber then enters his response, i.e. the number associated with the response, the corresponding GTMF signal is transmitted, received by the network and translated; the intelligent services branches into the part of the program in which the corresponding program section is executed and, if necessary, a corresponding voice announcement is generated in the service network node or the peripheral. Branching into a submenu is also possible and a later return to a higher-level menu etc.

However, the dialogs of the known type are often associated with high expenditure of network resources since the service network node or, respectively, the associated peripheral are also occupied during the times between output to the subscriber and his input of a response. In the case of complicated, e.g. multi-stage dialogs, the signal complexity via the connecting interface, e.g. the air interface in the case of mobile radio systems, can also become very high.

It is also known that a terminal for request subscriber inputs, e.g. a PIN code. However, these requests are predetermined for the terminal and non-specific to the service used by the subscriber and do not result in any simplification for the performance of, in particular, complex dialogs.

From EP 0 812 120 A2 and from the publication "wireless application protocol- wireless telephony application specification- draft version" of

4431

30.4.1998, WAP Forum Ltd, XP002128849, it is known in each case to transmit dialog information, for the performance of a dialog between a service of a telecommunication network and a terminal, to the
5 terminal, to store and to process it there and to transmit back a dialog result.

It is, therefore, the object of the invention to reduce the expenditure of resources for performing interactive dialogs. It is also intended to create the
10 possibility of faster and simpler handling

and processing of a dialog between subscriber and intelligent service.

On the basis of a method of the type initially mentioned, this object is achieved in that, according to the invention, the service transmits dialog information relating to the performance of the dialog, independently of actions of the subscriber, to the terminal of the subscriber via a network connection, this dialog information is stored by the terminal and the terminal performs the output(s) to the subscriber by means of the stored dialog information on the basis of a specific command given to it and receives and processes the input(s) of the subscriber, derives a dialog result therefrom and transmits this result to the service via a network connection.

Performing the dialog in the terminal saves implementing corresponding dialog procedures in the network and expending resources. All information required for performing the dialog is transmitted to the terminal at the beginning of the dialog or during a preceding network connection so that the relevant network resources are only occupied for this comparatively short time.

The dialog information suitably contains commands of a dialog program which is executed by a processor of the terminal for performing the dialog and determining the result of the dialog.

The dialog information advantageously also contains message information which describes the messages and input requests to be output and the type of expected inputs.

In an advantageous embodiment of the invention, the output to the subscriber is carried out via a display,

e.g. by means of text and/or graphics, to increase the user friendliness.

5 In another advantageous embodiment, an increased ease of operation is achieved in that the output to the subscriber is at least partially carried out via voice announcements which are requested from the network and are received from the network via a voice channel of a network connection at the time of the output and are output to the subscriber.

10 To relieve the volume of signaling via the telecommunication network, it is advantageous if the dialog information and/or the dialog result are at least partially transmitted via a transaction connection of the network.

15 The dialog information can also advantageously remain stored in the terminal after the dialog is finished which also lowers the required signaling volume and accelerates the performance of the dialog by the terminal.

20 The transmission of dialog information is advantageously requested by the terminal by means of a message sent to the network, e.g. at a point provided in the service operation by the terminal for requesting additional dialog information when the terminal is
25 ready for receiving the information.

In this context, it is advantageous if the terminal checks the stored dialog information to find out whether it is adequate for performing the relevant dialog and, if not, sends a request message for the
30 transmission of corresponding dialog information. In the other case, the request is not necessary which, in turn, has a relieving effect on the signaling volume.

The output to the subscriber is advantageously effected via at least one menu which offers a predetermined number of input possibilities to the subscriber, the subscriber selects one of these input possibilities by means of his input and this input is used, in dependence on the menu logic, as a dialog result or for the menu-controlled continuance of the dialog. This allows a comfortable, easily traceable representation of the output.

The object set out above is also achieved on the basis of a telecommunication terminal of the type initially mentioned which, according to the invention, exhibits a memory device for storing dialog information relating to the performance of at least one dialog with the subscriber, a control device for executing the output(s) to the subscriber, for receiving and processing the input(s) of the subscriber and for deriving a dialog result by means of the dialog information, and a transmitting device for receiving dialog information and for transmitting a dialog result via a network connection.

The advantages of this solution have already been explained with reference to the method according to the invention.

The control device of the terminal is suitably constructed as processor for executing a dialog program, the commands of which for performing the dialog and determining the dialog result are contained in the dialog information.

In the sense of enhanced ease of operation, a voice output device for outputting voice announcements to the subscriber can be provided in the terminal.

In this context, the terminal is advantageously set up for requesting voice announcements from the network and receiving these

from the network via a voice channel of a network connection and outputting them to the subscriber.

In another advantageous embodiment, the terminal is set up for requesting the transmission of the dialog information by means of a message sent to the network.

In order to reduce the signal volume when a dialog is used repeatedly, the terminal is suitably set up for keeping the dialog information stored after the end of the dialog.

To simplify the signal volume, it is also advantageous if a device for receiving dialog information and/or for sending a dialog result via a transaction link of the network is provided in the terminal.

The object set above is similarly achieved by a telecommunication network of the type initially described, which is set up for transmitting, in dependence on the service operation, the dialog information required by the terminal for performing the dialog, via a network connection, receiving a dialog result transmitted by the terminal and continuing the service in dependence on this result.

The advantages produced by this solution have already been represented above.

An advantageous embodiment of the telecommunication network according to the invention is set up for transmitting dialog information on the basis of a specific request message of the terminal.

The telecommunication network is also advantageously set up for transmitting voice announcements, which can be used by the terminal in an output to the subscriber,

on the basis of a specific request message of the terminal.

5 An advantageous embodiment of the telecommunication network according to the invention exhibits a server device for centrally storing the dialog information and/or output information, especially voice announcements, which simplifies the administration and the call-up of these data.

10 In this arrangement, the telecommunication network can advantageously forward request messages relating to the transmission of dialog information and voice announcements, respectively, to the server device and accept from the latter the requested dialog information or, respectively, voice announcements and
15 transmit these to the terminal.

It is also advantageous if the telecommunication network is set up for handing over control of the service to the server device for the duration of the performance of the dialog and
20 continuing the service after the end of the dialog and reception of the dialog result from the server device.

In the text which follows, the invention will be explained in greater detail with reference to an exemplary embodiment, using the attached drawings, in
25 which:

Figure 1 shows a diagrammatic overview of a telecommunication network, and

Figure 1a shows the terminal in greater detail;

Figure 2 shows a signaling sequence of an interactive
30 dialog.

The exemplary embodiment relates to a GSM network MFN, the essential components of which, inasmuch as they are of significance to the representation of the invention, are shown in Figure 1.
35 For administering and executing intelligent services,

a service control point SCP, which is constructed, e.g. as a so-called "CAMEL Service Environment" (CSE) according to the CAMEL standard is set up in the network MFN. The subscriber TNR which is here
5 representative for the subscribers of the network MFN which are authorized to use the service, is connected to the mobile radio network MFN via his terminal, a mobile telephone MTL in the exemplary embodiment. A connection here means any type of technical measures
10 which enable the relevant subscriber or, respectively, terminal to establish network connections, for instance the access air interface ALS of the GSM network between the terminal MTL and a base station of the network in the example, in connection with the associated
15 configuration data of the subscriber TNR for the network MFN, e.g. the subscriber characteristics, stored in the service control point SCP and/or a home location register including any personal access codes which may have been issued such as, for example, a so-
20 called "personal identification number" (PIN). All connections and control messages which relate to the subscriber TNR pass via the switching center, which is a "mobile service switching point" (MSP) in the present case and which is associated with the connection ALS,
25 as long as the subscriber is located within the coverage area of the switching point MSP.

It is assumed that a so-called "prepaid" service is set up, for example, in the mobile radio network MFN, which service allows a call to be charged
30 at the same time as the connection is being operated. For this purpose, an account in a network component, e.g. the service control point SCP, is allocated to the subscriber TNR. A connection of the subscriber is monitored by the associated switching point MSP and the
35 service control point SCP with regard to the charges arising. At the latest at the end of the connection, an amount corresponding to the appropriate tariff model is deducted from the user

account. The account can also be "stocked up" again by the subscriber TNR. For this purpose, and for interrogating the account, a statement-of-account service is offered under its own service call number.

5 If the

subscriber dials this call number, the relevant service is called up via the switching point MSP. A menu interrogation can have the following appearance, for example:

- 5 1 Information on the service
- 2 Current balance
- 3 Restocking the account
- 4 Changing the PIN
- 5 End

10 The mobile subscriber can be notified of this menu, e.g. via a voice announcement of the form "dial 1 in order to find out general information on the service - dial 2 for interrogating your balance...". If the subscriber then enters the number 2, the intelligent
15 service is intended to interrogate the current balance of the account from a database and then produce a corresponding voice announcement, for instance "your balance is ...".

 According to the invention, the dialog such as
20 the DTMF menu described is then carried out by a program logic executed locally on the terminal MTL. In the text which follows, the operation of a service in which a dialog takes place will be represented by way of example by means of the above-mentioned "prepaid"
25 service, referring to Figure 2.

 It will be assumed, for instance, that the subscriber would like to interrogate his balance. For this purpose, the subscriber dials the call number #dst of the statement-of-account service which is
30 transmitted via the terminal MTL to the associated switching point MSP in a SETUP message. In the switching point MSP, an initial detection point (IDP) message is generated which starts the desired service DST in the service control point SCP. The IDP message
35 is a part of the INAP protocol; in other embodiments, the appropriate signaling types known to the expert must be used. The service DST usually

runs in the service control point SCP in the form of a service control function (SCF).

The service controller then recognizes - possibly after initialization of the service and first
5 working steps - that an interactive dialog with the subscriber TNR has to take place and that this is to be executed on the terminal MTL of the subscriber. The information required for performing the dialog is then transmitted to the terminal. For this purpose, the
10 service control point transmits a request message and to a dialog server DGS especially set up for the purpose of storing the dialog information and/or the output information used during dialogs, especially voice announcements, and orders the server to carry out
15 the interactive dialog DIG.

In the exemplary embodiment, the dialog server DGS is a separate network node which is set up in the network MFN for the central storage of the dialog information necessary for the performance of dialogs by
20 terminals and, if necessary, for voice announcements. The dialog server DGS can also take over control of the service DST for the duration of the performance of the dialog from the service control point SCP; when the dialog is finished, the dialog server returns the
25 operation of the service to the service control point SCP. In a telecommunication network MFN, a number of dialog servers can be provided which, e.g., in each case supply different groups of services or different coverage areas of the network. The dialog server can
30 also be, for example, a data server computer connected via another information or data network such as the Internet.

The dialog server DGS is advantageously incorporated directly in the network MFN so that the
35 transmission of the data 2 to and, respectively, from the terminal MTL has to occur directly via the switching point MSP but not via the service control

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point SCP. Of course, it is also possible and, in special cases, suitable,

to connect the dialog server DGS via the service control point SCP or another network node, e.g. a gateway.

5 Naturally, it is also possible for the storage and administration of dialog information to be handled by one or more network nodes such as, e.g. a switching center or, in particular, also the service control point SCP.

10 The dialog server DGS then transmits to the terminal MTL data which relate to the performance of the dialog DIG, a menu of the type described above in the example, by the terminal. Using these data, which are here designated dialog information dif, the terminal MTL - after the dialog DIG has been started by
15 the termination of the transmission of the dialog information dif - executes the output(s) to the subscriber TNR according to the invention, receives the input(s) of the subscriber and processes these. During the execution of a dialog DIG, the service goes into a
20 suspended state in a network MFN until further information from the terminal arrives which indicates the end of the dialog.

The address of the terminal to which the dialog information dif is to be sent, the dialog server DGS
25 receives as a parameter of the dialog request and/or via a separate message, e.g. of the INAP protocol from the service control point SCP or the switching point MFP. This is necessary because the transmission of the dialog information dif and the return messages of the
30 terminal can take place via different transmission paths, in particular also via other connections than the subscriber connection ALS. If necessary, the interrogation is conducted by a dialog server DGS itself, e.g. by means of an inquiry at the home
35 location register of the network in an any-time-interrogation message.

After the dialog information dif has been transmitted, the connection of the terminal MTL to the network can be taken down which is necessary, in particular, if the terminal will be blocked by the reception of the dialog information due to the full connection. It is also possible to reduce the expenditure of resources, especially in the case of elaborate dialogs, by taking down the full connection and establishing, e.g. a transaction link. The release of the network connection can be initiated by the terminal MTL, e.g. by means of an REL message ("release call") or initiated by the network, either directly or by an indication to the terminal which requests the terminal to release the connection. As another possibility, the original connection can remain in existence and be released at a later time, e.g. at the end of the dialog.

The dialog information dif can be, for example, data which control in a program permanently stored in the terminal MTL or a code which can be interpreted or executed in the manner of a program. Thus, the dialog information dif can be written, e.g. in Java code which is executed by a so-called Java Virtual Machine in the terminal MTL. The dialog information dif stored in the terminal MTL forms, together with the hardware and/or software of the terminal which is provided for controlling the interactive dialog and, in particular, the interpretation and execution of the dialog information, a local "branch" of the service which precedes the service DST as "service front end" SFE and handles the interaction with the subscriber TNR for this service. In the wider sense, the front end SFE can also be considered as a subroutine of the service DST.

The terminal MTL exhibits a transceiver device SEE, a terminal controller EST for coding and decoding the received signals and those to be sent

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for the output and, respectively, of the input of the
user and an input/output device

EAG which exhibits, e.g. a keypad TAS and a microphone/loudspeaker device MLE in a mobile telephone; in addition, a display ANZ can also be provided. To execute the front end SFE, a memory MEM
5 for storing the received dialog information dif and a processor PRZ which executes, e.g. the commands contained in the dialog information or performs the dialog by means of a separate permanently programmed interpreter logic with reference to the dialog
10 information, are advantageously provided. The processor PRZ can be designed as a separate component or as a part of other components, e.g. integrated with the terminal controller. In accordance with the network MFN, the terminal can be implemented, for example, as
15 line network telephone, as mobile radio telephone, as so-called mobile communicator or as any other device equipped as a terminal for receiving, processing and transmitting telecommunication messages.

Performing the dialog in the terminal MTL makes
20 it possible to save on implementing corresponding dialog procedures in the network MFN, such as, e.g. in peripherals, and the expenditure of resources which are required for the messages to be exchanged between the subscriber TNR and the service DSG in the course of a
25 dialog. All information dif required for performing the dialog is transmitted to the terminal at the beginning of the dialog so that the appropriate network resources are only occupied for this comparatively short time. The front end thus created runs in the terminal MTL,
30 i.e. at the location of the subscriber TNR. At this point, it should be emphasized that the invention is just as suitable for intelligent networks implemented as line networks as for GSM networks in which, e.g. the CAMEL standard is implemented, or other mobile radio
35 networks such as, e.g. IS-95 used in the US, or also the "universal mobile telecommunication system" UMTS.

The front end SFE thus runs on the terminal MTL and executes the dialog DIG with the subscriber here. In the example, this means that the menu explained above is displayed and/or announced to the subscriber.

5 The form of representation of the output to the subscriber is carried out via the input/output device EAG of the terminal. Depending on what components the input/output device EAG has, namely, for example, a microphone/loudspeaker device MLE and/or a display ANZ
10 etc., in addition to the usual keypad TAS, the menu can be output in many ways, e.g. as a text with a fixed character set (e.g. ASCII) and/or as graphics on the display ANZ, as a voice output or in any suitable form. It is an essential advantage of the invention that it
15 provides for the output on the terminal to be in visual form or combined audio-visual form.

As a part of the output to the subscriber TNR, the latter is requested to select a menu item. Once the subscriber has made his choice, he inputs it, e.g. via
20 the keypad TAS; depending on the dialog structure, the dialog then branches e.g. into another menu or the dialog is continued in another form. During this process, the front end SFE determines a dialog result drs, forwards it to the transceiver device SEE of the
25 terminal for transmission to the network MFN and finally terminates the dialog. In the example, the subscriber selects the menu item "current balance" and presses number key 2 of his mobile telephone MTL. In the example, the dialog result drs is the number of the
30 selected menu branch but can be generally a subset of the subscriber inputs, or all of the subscriber inputs or a result calculated from this via the front end SFE. The transmission of the dialog result drs does not need to take place via a full connection, i.e. a call
35 connection of the mobile radio network MFN in the example, but other

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transmission paths can be used, especially if the original connection has already been released,

e.g. via short message services or the like; these solutions will still be discussed in greater detail below.

5 In a variant, a number of dialog results drs can also be sent back to the network from a dialog. In this case, it is advantageous if the termination of the dialog DIG or, respectively, of the dialog front end SFE is indicated to the service DST in the last dialog result sent or in a separate message.

10 The dialog result drs is forwarded in the network MFN to the dialog server which processes it and sends a return message, e.g. as FIN message, to the service control point. Depending on the result of the dialog received in the dialog result drs and the return
15 message rmd, the service DST then continues.

In the example, the service branches to the section which outputs the current balance of the subscriber TNR in accordance with the choice of the subscriber. In the service control point SCP an
20 interrogation is carried out in familiar manner and the relevant balance is determined. The balance can then be output to the subscriber TNR in an interactive dialog also according to the invention, instead of being carried out by means of a peripheral in familiar
25 manner. For this purpose, the service control point directs a second request message anf', in which a corresponding information dialog is requested and the balance is used as parameter, to the dialog server DGS. Analogously to the process described above, the dialog
30 server DGS then sends dialog information which describes this information dialog DIG' with the current balance. In this particular case, it suffices if the dialog result drs' comprises the acknowledgement message for the reception of the dialog information
35 dif' and/or the output of the balance information. The subscriber acknowledges the output of the balance message, e.g.

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by pressing a key provided for this purpose. After the appropriate return message

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rm'd' of the dialog server DGS, the service DST is terminated in the example; naturally, in other cases, post processing can still occur in dependence on the relevant service and the preceding events and dialog results, e.g. other dialogs can be initiated or a new connection is established (initiated by a connection request CON).

As already mentioned, the invention reduces the consumption of resources, especially via the access interface ALS from the network MFN to the terminal MTL. This also leads to faster handling and processing of the dialog between the user and the service - more precisely the front end, since it is not necessary to wait for messages to be transmitted in the network. Furthermore, the representation of the dialog can be made user-friendly in a simple form.

An interactive dialog can be triggered in accordance with known methods as can be seen, e.g. in ETSI standards for intelligent networks or the GSM CAMEL standards. To call up a service dialog or a service controlled by means of dialogs, the subscriber can dial, for example, a predetermined call number #dst. Furthermore, an intelligent service can also switch in familiar manner, e.g. via a peripheral, during a dialog to a front end in the terminal MTL which continues the dialog or performs a part of the dialog; as well, dialog steps can be conversely used in accordance with known methods in a dialog via the terminal MTL. Naturally, a transmission of corresponding messages between the terminal MTL and the service network node MSP, SCP or, respectively, the dialog server DGS for requesting the relevant dialogs or dialog functions must be provided for this purpose.

For the terminal MTL, the arrival of the dialog information dif, the input of a specific command by the

subscriber TNR or another adequate event such as, e.g. the reception of a starting message sent by the network, serves as a signal for starting the dialog DIG or, respectively, the front end SFE.

5 As already mentioned, the dialog can be divided into parts, especially in the case of complex dialogs, and the dialog can be executed in such a manner that only one dialog part is transmitted in a dialog information message. The other parts are requested as
10 required, advantageously by means of corresponding request information which is stored in the dialog information of the dialog part which has just been executed. Thus, for example, a main menu can be transmitted first and the subordinate submenus are only
15 transmitted when the relevant submenu is requested as a consequence of a corresponding choice of the subscriber.

The structure of the dialog information dif can differ in dependence on the requirements of the
20 transmission via the access interface ALS and the display capabilities of the terminal MTL; corresponding parameter information is stored, if necessary, in the subscriber characteristics. The dialog information can be available, for example, as program code, as mark-up
25 document (see below) or as a simple text in the form of a character string.

In the case where the dialog information dif is implemented as program code, the dialog information is available as code, e.g. as Java code, which can be
30 executed or interpreted by the processor PLZ of the terminal MTL. Furthermore, it can be provided, for the case where the terminal MTL is not immediately capable of interpreting the dialog information dif, to transmit an interpretation program from the network to the
35 terminal MTL in order to realize a so-called "virtual machine".

Another possibility is to display the dialog information dif by means of a mark-up document, e.g. an HTML

(Hyper-text mark-up language) document or a mobile-radio-specific mark-up language such as, for instance, HDML (hand-held mark-up language) or WML (wireless mark-up language). Mark-up languages are used as text setting languages for representing texts, where information on the formatting of text, text styles, cross references etc. are represented as so-called mark-ups. Mark-ups are commands in text form which can be recognized as commands from certain features, e.g. a backslash. A mark-up text interpreter or compiler, a so-called browser, converts these mark-ups into the corresponding features for the remaining text. In this case, the browser part is the front end SFE and the output is effected with the aid of the display ANZ of the terminal MTL. The dialog in the form of a mark-up document can be animated with the aid of embedded program routines (so-called applets). These program routines can request the user to input an information item and can also perform syntax checks or semantic checks locally at the terminal MTL via the input characters. The dialog content, especially the text of the menus, can be displayed, e.g. in the form of text characters, as graphics or via cross references and by combinations of these. In this process, a predetermined file format can also be demanded.

In the simplest case, the dialog information consists of a sequential character string. The individual entries of a menu can be separated by specific codes. A code at the beginning of the character string, for example, identifies the character string as a menu, possibly with a specification with regard to an interleaved menu. A code at the end of the character string is used for identifying the end of menu. The character string can also contain, if necessary, formatting information with regard to the display on the display ANZ, and separating symbols for differentiating between the individual menu lines. The significance of these

The dialog information can be suitably transmitted via a transaction link, i.e. a connection without voice channel. Examples of this in the GSM network are, for instance, the aforementioned USSD or a short message service (SMS). In this connection, parts of the dialog information, e.g. individual menu entries, can be transmitted in different messages, if this is required because of the volume of the information to be transmitted or is expedient for other reasons, which messages are received by the terminal and are jointly processed. Even if the original connection has not yet been released (REL message in Figure 2), the message can be received via the transaction link. Due to their codes, the content of the dialog information dif transmitted via USSD, as short message or the like can be recognized by the terminal MTL as menu of an interactive dialog and can be displayed correctly on a display by means of the formatting. Thus, the message is not simply displayed as USSD message or short message or stored in a memory otherwise provided for these messages but displayed as dialog information in the format of the menu. During this process, the terminal MTL can temporarily buffer the arriving information, e.g. in a part-area of the memory MEM reserved for this purpose, until the menu display to be output has been completely received and processed.

At this point, the so-called GSM service data transfer or a transmission by means of the WAP protocol which forms the basis of the above-mentioned WML mark-up language must be mentioned as examples of other possibilities for transmitting the dialog information dif. Packet-oriented services such as, e.g. "the general packet radio service" (GPRS) of the GSM network or circuit switched connections such as, e.g. via "high-speed circuit switched data" (HSCSD) in the GSM network can also be used. The examples mentioned here relate to mobile networks, but corresponding solutions are also

available for land networks; at this point, the use of a service for electronic mail (e-mail) must also be mentioned. In addition, these methods can also be combined with one another. The corresponding addresses, via which the subscriber TNR or, respectively, the terminal MTL can be reached via these transmission methods, e.g. an SMS address code or an Internet or e-mail address, are stored in the service control point SCP, the home location register of the mobile radio network MFN or directly in the dialog server DGS.

The selection of the transmission methods used can be permanently preset for the subscriber or can be determined on the basis of the resources which are currently available, in dependence on information about the capabilities of the terminal MTL and the performances offered by the network MFN, which can be used with regard to the subscriber location. Thus, for instance, it can be provided to use GPRS for transmitting dialog information for a GPRS-capable terminal as long as the terminal is located within a coverage area with GPRS provision. The relevant decision can be made by the service DST (or, respectively, the service program), the dialog server DGS or, if the first request is made by the terminal MTL, at the terminal MTL (or, respectively, the front end SFE). In this arrangement, a certain transmission path, e.g. USSD, could be preset.

The dialog result drs and possibly other messages relating to the performance of the dialog - for example error messages - can be transmitted on one of the abovementioned transmission paths, the same path as for the transmission of the dialog information dif being usually used for the sake of simplicity; in special cases, however, it may also be expedient to change the transmission method. In addition, terminal-oriented signaling systems such as, for instance, DTMF, can also be used.

According to the invention, the terminal is capable of executing one or more of the following functions or combinations thereof:

- executing a code, e.g. a program code,
- 5 - interpreting a code, e.g. a Java code,
- interpreting a mark-up document (e.g. in HTML, WML etc.) and displaying it appropriately, e.g. on the display ANZ,
- receiving and processing a message via a full link
10 or a transaction link, e.g. via SMS, USSD or the like (see above) and displaying the message content in accordance with an output format in each case defined for the message,
- functions for user input, e.g. via keypad, with
15 the aid of programmable keys (so-called soft keys) by means of a touch-sensitive screen etc.,
- coding and sending a message via a full message or a transaction message;

and, naturally, the functions required for requesting
20 and receiving a connection as a terminal including the receiving and sending of user information.

In the dialog between the subscriber TNR and the service front end SFE, it is necessary that the subscriber inputs information which is used for
25 controlling the dialog and/or for determining the result of the dialog drs. The inputs can be made, for example, via a keypad TAS which can also use programmable keys, the function of which can then differ within the respective menu, via touch-sensitive
30 input/output devices, by using a mouse for clicking on a screen etc.

A dialog can also be started in a service which has been called up due to an event in the network. Thus it is possible, for example in the "prepaid" service
35 that in the case where the balance of the account

of the calling subscriber is exhausted during a call, the call connection is disconnected or suspended and a corresponding service is called up which informs the subscriber of the reason for the interruption, e.g. by means of the menu shown above, and invites him to conduct a menu interrogation and stocking-up of the balance. If the latter takes place, the subscriber is asked in another menu whether the call is to be continued again. In the meantime, an announcement (e.g. "please wait") is fed to the other party.

In a variant of the invention, the dialog information dif can be stored at the terminal MTL, for example in the memory MEM of the terminal or on an SIM (subscriber identity module) card which can be written to and read out again by the terminal via a protocol interface. In this way, a repeated loading of the same dialog information in successive dialogs or uses of the service can be avoided. This means a saving in resources, especially at the access interface ALS.

If the subscriber TNR, for instance, enters the service call number #dst of a service at the terminal MTL, the terminal MTL checks whether this service begins with an interactive dialog, the dialog information dif of which is already stored at the terminal. If this is so, the dialog DIG or, respectively, the front end SFE, is performed immediately by the terminal MTL. When the dialog is finished, the dialog result drs is sent, together with an unambiguous code for the executed dialog DIG and the service DST, to the network. If necessary, e.g. for reasons of network administration or for correctly performing the dialog refreshments, an indication that the service dialog DIG is started on the terminal MTL can already be sent to the network MFN or, respectively, the service control point SCP at the start of the dialog. In this arrangement, a special call number,

provided for these transmissions between the terminal MTL and the service control point SCP, can be used which, e.g., is permanently stored in the terminal as a service-independent number or is stored as part of the dialog information dif. Between the dialog server DGS and terminal MTL, there is a correlation defined by the dialog information. Dialog information dif is transmitted as soon as this is recognized as necessary by the service DST or the terminal MTL. In any case these messages can be transmitted independently of a user connection.

The dialog information stored in the terminal are refreshed, for example, when a new software version of the dialog is taken into operation or if it is requested by the terminal. The dialogs stored by the terminal are selected as determined by the available memory space, e.g. on the basis of the frequency of the dialogs or menus and submenus used. If the subscriber accesses a certain selection of a certain submenu of the menu very frequently, the corresponding dialog information is kept in a cache memory; other information must be requested from the network, if necessary. This shortens the access times for selection paths which are used frequently.

Thus, the transmission of the dialog information dif and the execution of the dialog DIG on the front end SFE can take place at separate times. The dialog DIG is started by a corresponding command by the subscriber, for example by the input of a call number or by means of a command key on the terminal. The transmission of the dialog information dif, however, is initiated by the service DST.

In special cases, e.g. in the case of a predictable frequent use of a certain dialog, the corresponding dialog information can also be stored in a part designed

as permanent memory (ROM memory) of the terminal memory MEM.

It should be noted that the invention is not restricted to the exemplary embodiments listed, especially not to its use in a mobile radio network but is suitable for telecommunication networks of any type. Moreover, the inputs are not restricted to keypad inputs or DTMF signals, or the outputs are not restricted to screen outputs or output of prerecorded voice announcements but all methods of information input/output including voice-controlled input/output, pointer-controlled input (e.g. by mouse) etc. known to the expert can be used.

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Patent claims

1. A method for performing a dialog between a
service (DST) of a telecommunication network (MFN) and
5 a subscriber (TNR) connected to the network via a
terminal (MTL), in which method, at least messages
and/or input requests are output to the subscriber and
at least information is input by the subscriber, in the
dialog via the terminal (MTL), and the service (DST) is
10 continued in dependence on a dialog result (drs)
derived therefrom,
wherein the service (DST) transmits dialog information
relating to the performance of the dialog,
independently of actions of the subscriber, to the
15 terminal of the subscriber via a network connection,
this dialog information is stored by the terminal and
the terminal performs the output(s) to the subscriber
by means of the stored dialog information on the basis
of a specific command given to it and receives and
20 processes the input(s) of the subscriber, derives a
dialog result therefrom and transmits this result to
the service via a network connection,
characterized in that the stored dialog information is
checked via the terminal (MTL) to see whether it is
25 adequate for performing the relevant dialog and, if
not, a request message for the transmission of
corresponding dialog information is sent
and that the transmission of dialog information (dif)
is requested via the terminal (MTL) by means of a
30 message sent to the network (MFN).

2. The method as claimed in claim 1, characterized in that the dialog information (dif) contains commands of a dialog program which is executed by a processor (PRZ) of the terminal for performing the dialog and
5 determining the dialog result (drs).

3. The method as claimed in claim 1 or 2, characterized in that the dialog information (dif) contains message information which describes the messages and input requests to be output and the type
10 of expected inputs.

4. The method as claimed in one of claims 1 to 3, characterized in that the output to the subscriber is effected via a display, e.g. by means of text and/or graphics.

15 5. The method as claimed in one of claims 1 to 4, characterized in that the output to the subscriber is effected at least partially via voice announcements, which are requested from the network (MFN) and are received from the network via a voice channel of a
20 network connection at the time of the output and are output to the subscriber.

6. The method as claimed in one of claims 1 to 5, characterized in that the dialog information (dif) and/or the dialog result (drs) are at least partly
25 transmitted via a transaction link of the network (MFN).

7. The method as claimed in one of claims 1 to 6, characterized in that the dialog information (dif) remains stored in the terminal after the dialog has
30 finished.

8. The method as claimed in one of claims 1 to 7, characterized in that the output to the subscriber (TNR) is advantageously effected via at least one menu which offers a predetermined number of input possibilities to the subscriber the subscriber selects one of these input possibilities by means of his input and this input is used, in dependence on the menu logic, as a dialog result (drs) or for the menu-controlled continuance of the dialog. This allows a comfortable, easily traceable representation of the output.

9. A telecommunication terminal (MTL) which can be connected to a telecommunication network (MFN) and which is set up for exchanging messages and/or commands with the network (MFN) and for outputting messages and input requests to a subscriber (TNR) utilizing the terminal (MTL) for using the network and for receiving inputs of the subscriber (TNR), which exhibits the following:

- a memory device (MEM) for storing dialog information (dif) relating to the performance of at least one dialog with the subscriber (TNR),
- a control device (PLZ) for executing the output(s) to the subscriber (TNR), for receiving and processing the input(s) of the subscriber and for deriving a dialog result (drs) by means of the dialog information, and
- a transmitting device (SEE) for receiving dialog information (dif) and for transmitting a dialog result (drs) via a network connection

characterized in that the terminal (MTL) is constructed in such a manner that the stored dialog information is checked via the terminal (MTL) to see whether it is adequate for performing the relevant dialog and, if not, a request message for the transmission of corresponding dialog information is sent,

and the transmission of dialog information (dif) is requested via the terminal (MTL) by means of a message sent to the network (MFN).

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10. The terminal (MTL) as claimed in claim 9, characterized in that the control device (PLZ) is set up as processor for executing a dialog program, the commands of which for performing the dialog and determining the dialog result are contained in the dialog information.

11. The terminal (MTL) as claimed in claim 9 or 10, characterized by a voice output device (MLE) for outputting voice announcements to the subscriber.

12. The terminal (MTL) as claimed in claim 11, characterized in that it is set up for requesting voice announcements from the network (MFN) and receiving these from the network via the voice channel of a network connection and outputting them to the subscriber.

13. The terminal (MTL) as claimed in one of claims 9 to 12, characterized in that it is set up for requesting the transmission of the dialog information (dif) by means of a message sent to the network (MFN).

14. The terminal (MTL) as claimed in one of claims 9 to 13, characterized in that it is set up for keeping the dialog information (dif) stored after the dialog has ended.

15. The terminal (MTL) as claimed in one of claims 9 to 14, characterized by a device for receiving dialog information (dif) and/or for sending a dialog result (drs) via a transaction link of the network (MFN).

16. A telecommunication network (MFN) in which services for subscribers can be used, a dialog with the subscriber (TNR) who uses the service and is

connected to the network via a terminal (MTL) being provided in at least one the services (DST) and in this dialog, at least messages and/or input requests are output to the subscriber and at least information is
5 input by the subscriber, characterized in that it is set up for transmitting, in dependence on the service (DST) operation, the dialog information required by the terminal (MTL) for performing the dialog, via a network connection, receiving a dialog result (drs) transmitted
10 by the terminal (MTL) and continuing the service (DST) in dependence on this result.

17. The telecommunication network (MFN) as claimed in claim 16, characterized in that it is set up for sending dialog information (dif) on the basis of a
15 specific request message by the terminal (MTL).

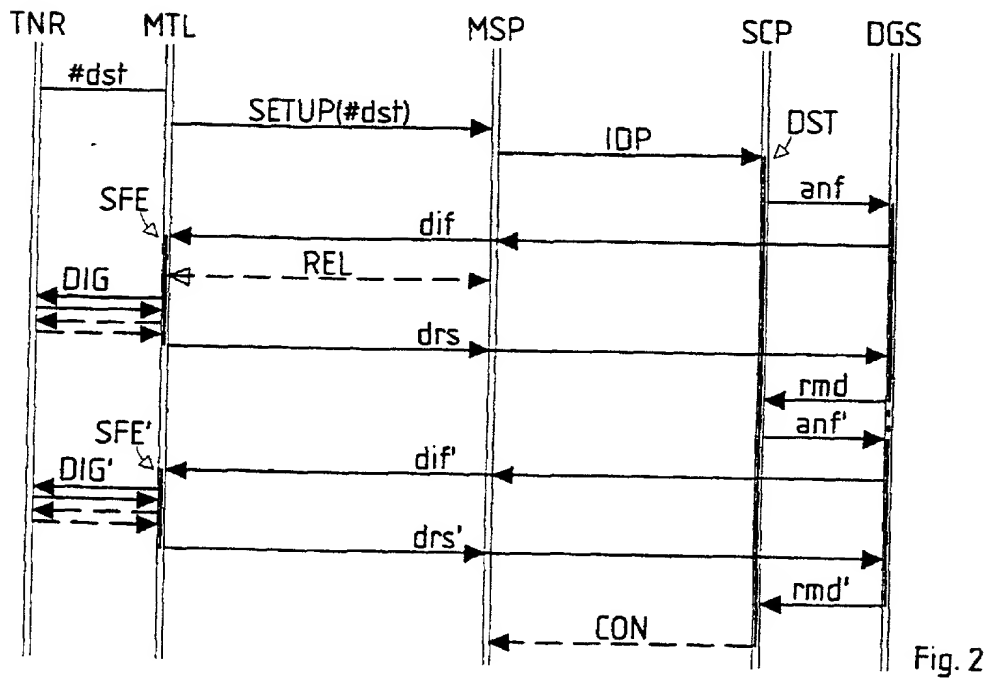
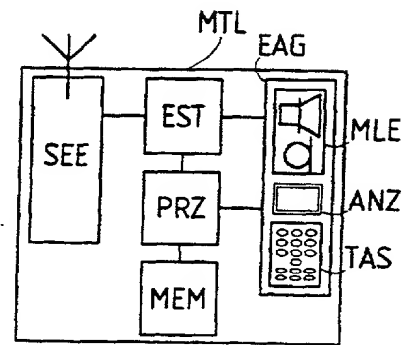
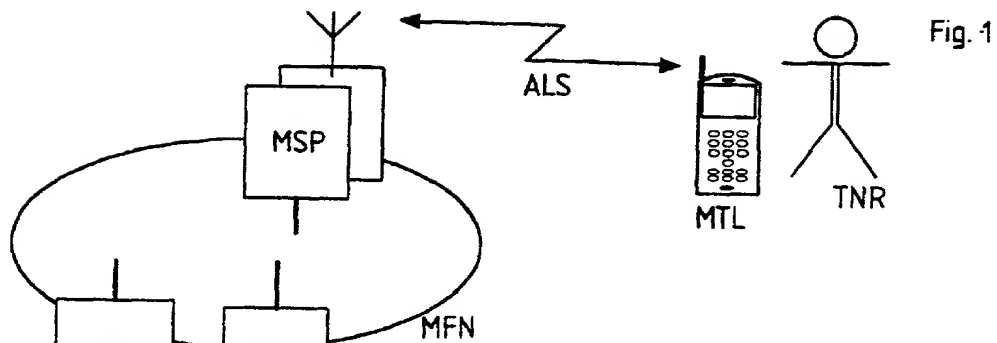
18. The telecommunication network (MFN) as claimed in claim 16 or 17, characterized in that it is set up for sending voice announcements, which can be used in an output to the subscriber by the terminal, on the
20 basis of a specific request message by the terminal (MTL).

19. The telecommunication network (MFN) as claimed in one of claims 16 to 18, characterized by a server device (DGS) for central storage of dialog information
25 (dif) and/or output information, especially voice announcements.

20. The telecommunication network (MFN) as claimed in claim 19, characterized in that it is set up for forwarding request messages relating to the
30 transmission of dialog information (dif) and, respectively, voice announcements to the server

device (DGS) and accepting from the latter the requested dialog information (dif) and, respectively, voice announcements and transmitting them to the terminal (MTL).

- 5 21. The telecommunication network (MFN) as claimed in claim 19 or 20, characterized in that it is set up for transferring the control of the service (DST) to the server device (DGS) for the duration of the performance of the dialog and continuing the service
- 10 after the dialog has ended and the dialog result (drs) has been received by the server device (DGS).



Declaration and Power of Attorney For Patent Application**Erklärung Für Patentanmeldungen Mit Vollmacht****German Language Declaration**

Als nachstehend benannter Erfinder erkläre ich hiermit an Eides Statt:

dass mein Wohnsitz, meine Postanschrift, und meine Staatsangehörigkeit den im Nachstehenden nach meinem Namen aufgeführten Angaben entsprechen,

dass ich, nach bestem Wissen der ursprüngliche, erste und alleinige Erfinder (falls nachstehend nur ein Name angegeben ist) oder ein ursprünglicher, erster und Miterfinder (falls nachstehend mehrere Namen aufgeführt sind) des Gegenstandes bin, für den dieser Antrag gestellt wird und für den ein Patent beantragt wird für die Erfindung mit dem Titel:

Übermittlung von Dialoginformation vom Telekommunikationsnetz zum Teilnehmerendgerät

deren Beschreibung

(zutreffendes ankreuzen)

☐ hier beigefügt ist.

☒ am 29.07.1999 als

PCT internationale Anmeldung

PCT Anwendungsnummer PCT/DE99/02346

eingereicht wurde und am

abgeändert wurde (falls tatsächlich abgeändert).

Ich bestätige hiermit, dass ich den Inhalt der obigen Patentanmeldung einschliesslich der Ansprüche durchgesehen und verstanden habe, die eventuell durch einen Zusatzantrag wie oben erwähnt abgeändert wurde.

Ich erkenne meine Pflicht zur Offenbarung irgendwelcher Informationen, die für die Prüfung der vorliegenden Anmeldung in Einklang mit Absatz 37, Bundesgesetzbuch, Paragraph 1.56(a) von Wichtigkeit sind, an.

Ich beanspruche hiermit ausländische Prioritätsvorteile gemäss Abschnitt 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 119 aller unten angegebenen Auslandsanmeldungen für ein Patent oder eine Erfindersurkunde, und habe auch alle Auslandsanmeldungen für ein Patent oder eine Erfindersurkunde nachstehend gekennzeichnet, die ein Anmeldedatum haben, das vor dem Anmeldedatum der Anmeldung liegt, für die Priorität beansprucht wird.

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

Transmission of dialogue information from a telecommunications network to a subscriber terminal

the specification of which

(check one)

☐ is attached hereto.

☒ was filed on 29.07.1999 as

PCT international application

PCT Application No. PCT/DE99/02346

and was amended on

(if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

German Language Declaration

Prior foreign applications
Priorität beansprucht

Priority Claimed

19834210.1

DE

29.07.1998

☒

☐

(Number)
(Nummer)

(Country)
(Land)

(Day Month Year Filed)
(Tag Monat Jahr eingereicht)

Yes
Ja

No
Nein

(Number)
(Nummer)

(Country)
(Land)

(Day Month Year Filed)
(Tag Monat Jahr eingereicht)

☐
Yes
Ja

☐
No
Nein

(Number)
(Nummer)

(Country)
(Land)

(Day Month Year Filed)
(Tag Monat Jahr eingereicht)

☐
Yes
Ja

☐
No
Nein

Ich beanspruche hiermit gemäss Absatz 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 120, den Vorzug aller unten aufgeführten Anmeldungen und falls der Gegenstand aus jedem Anspruch dieser Anmeldung nicht in einer früheren amerikanischen Patentanmeldung laut dem ersten Paragraphen des Absatzes 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 122 offenbart ist, erkenne ich gemäss Absatz 37, Bundesgesetzbuch, Paragraph 1.56(a) meine Pflicht zur Offenbarung von Informationen an, die zwischen dem Anmeldedatum der früheren Anmeldung und dem nationalen oder PCT internationalen Anmeldedatum dieser Anmeldung bekannt geworden sind.

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §122, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application.

PCT/DE99/02346

29.07.1999

(Application Serial No.)
(Anmeldeseriennummer)

(Filing Date D, M, Y)
(Anmeldedatum T, M, J)

(Status)
(patentiert, anhängig,
aufgegeben)

(Status)
(patented, pending,
abandoned)

(Application Serial No.)
(Anmeldeseriennummer)

(Filing Date D,M,Y)
(Anmeldedatum T, M, J)

(Status)
(patentiert, anhangig,
aufgeben)

(Status)
(patented, pending,
abandoned)

Ich erkläre hiermit, dass alle von mir in der vorliegenden Erklärung gemachten Angaben nach meinem besten Wissen und Gewissen der vollen Wahrheit entsprechen, und dass ich diese eidesstattliche Erklärung in Kenntnis dessen abgebe, dass wissentlich und vorsätzlich falsche Angaben gemäss Paragraph 1001, Absatz 18 der Zivilprozessordnung der Vereinigten Staaten von Amerika mit Geldstrafe belegt und/oder Gefängnis bestraft werden können, und dass derartig wissentlich und vorsätzlich falsche Angaben die Gültigkeit der vorliegenden Patentanmeldung oder eines darauf erteilten Patentes gefährden können.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

German Language Declaration

VERTRETUNGSVOLLMACHT: Als benannter Erfinder beauftrage ich hiermit den nachstehend benannten Patentanwalt (oder die nachstehend benannten Patentanwälte) und/oder Patent-Agenten mit der Verfolgung der vorliegenden Patentanmeldung sowie mit der Abwicklung aller damit verbundenen Geschäfte vor dem Patent- und Warenzeichenamt: (Name und Registrationsnummer anführen)

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. (list name and registration number)

Customer No. 25227

And I hereby appoint

Telefongespräche bitte richten an:
(Name und Telefonnummer)

Direct Telephone Calls to: (name and telephone number)

Ext. _____

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Voller Name des einzigen oder ursprünglichen Erfinders: Dr. REINHARD BECHER		Full name of sole or first inventor: Dr. REINHARD BECHER	
Unterschrift des Erfinders <i>Reinhard Becher</i>	Datum 5.3.2001	Inventor's signature	Date
Wohnsitz MUENCHEN, DEUTSCHLAND		Residence MUENCHEN, GERMANY	
Staatsangehörigkeit DE		Citizenship DE	
Postanschrift HOFMILLERSTR. 1		Post Office Address HOFMILLERSTR. 1	
81245 MUENCHEN		81245 MUENCHEN	
Voller Name des zweiten Miterfinders (falls zutreffend): Dr. GUENTER KLAS		Full name of second joint inventor, if any: Dr. GUENTER KLAS	
Unterschrift des Erfinders <i>Guenter Klas</i>	Datum 12.03.01	Second Inventor's signature	Date
Wohnsitz KARLSFELD, DEUTSCHLAND		Residence KARLSFELD, GERMANY	
Staatsangehörigkeit DE		Citizenship DE	
Postanschrift FRITZ-SCHOLL-STRASSE 1		Post Office Address FRITZ-SCHOLL-STRASSE 1	
85757 KARLSFELD		85757 KARLSFELD	

(Bitte entsprechende Informationen und Unterschriften im Falle von dritten und weiteren Miterfindern angeben).

(Supply similar information and signature for third and subsequent joint inventors).